CW#48/HW#48: SAS Congruence Theorem

Geometry

Due: Tuesday, November 24th

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP:\_\_\_\_\_

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| You will be able to identify when and how to prove triangles are congruent using SAS congruence theorem. |
| Draw a triangle named MCP below.   * Highlight side *MC* and *CP.* * Color in the included angle for side *MA* and *AP.* |
| *An included angle is an angle formed by two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ sides of a polygon.* |
| (ex 1) In triangle HOP, what is the included angle between *HO* and *HP?* |

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| Exploration #1:  C O  A T D G  Find the measure of the following:   1. m∠A = \_\_\_\_\_\_\_\_\_\_\_\_\_ 1) m∠D = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. *AC* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2) *DO* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. *AT* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3) *DG* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_  * Do you think the triangles above are congruent? (Circle one!)   Yes No     * Do you know that the triangles above are congruent, even though we only measured an included angle and 2 sides? Why or why not? * Do all the other sides and angles have to be congruent because the angle and sides above are congruent? Why or why not? |
| Measure the remaining corresponding sides of the triangle:   1. *CT* = \_\_\_\_\_\_\_\_\_\_\_\_\_ 1) *OG*  = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. *m∠C* = \_\_\_\_\_\_\_\_\_\_\_\_\_ 2) *m∠O* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. *m∠T* = \_\_\_\_\_\_\_\_\_\_\_\_\_ 3) *m∠G* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_  * NOW, do you know that the triangles above are congruent? Yes or No * Is measuring a side-angle and side is enough to decide that all the corresponding angles and sides are congruent? Why or why not? |

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| Copy the following postulate into your notebook:  POSTULATE (SAS ≅ SAS): If two sides and the included angle of one triangle are congruent to two sides and the included angle of a second triangle, then the two triangles are congruent.  by SAS  SAS. |
| *Determine whether enough information is given to prove that the triangles are congruent. If there is enough information, state if you would use SSS or SAS to prove these triangles congruent*  *.*  1.    2. |

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| Exploration #2  E  Confirm that the following measurement are congruent:  1) m∠A = \_\_\_\_\_\_\_\_\_\_\_\_\_ 1) m∠F = \_\_\_\_\_\_\_\_\_\_\_\_\_\_  2) *AC* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2) *ED* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_  3) *CB* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3) *EF* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_   * Do you think the triangles above are congruent? (Circle one!)   Yes No     * Explain why you believe these triangles are congruent or not.   Measure the remaining corresponding side and angles of the triangle:    4) m∠B = \_\_\_\_\_\_\_\_\_\_\_\_\_ 1) m∠E = \_\_\_\_\_\_\_\_\_\_\_\_\_\_  2) m*∠C* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2) *m∠D* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_  3) *AB* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3) *DF* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_   * NOW, do you know that the triangles above are congruent (using the information above)? * Is measuring just an angle and 2 sides enough to show the triangles are congruent? * How is this different from the previous exploration? |

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| http://upload.wikimedia.org/wikipedia/en/thumb/1/14/Donkey_from_Shrek.jpg/200px-Donkey_from_Shrek.jpgThere is NO POSTULATE that states that we can prove that triangles are congruent using SSA or ASS.  - Don’t be a donkey and get fooled by this ☺ |
| 1. Given: MO ≅ QO and NO ≅ PO   Prove: MON ≅ QOP  *In the box, write down everything that you know about the given triangles.*  Use the information above to explain why the triangles are congruent or why they are not. Write at  least 2 complete sentences. |

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| Practice: SAS |
| Criteria for Success: Did you…   * Annotate each figure * Identify corresponding angles and sides * Write congruency statements using mathematical symbols * Write at least 2 sentences explaining your reasoning |
| 1. Given: ,   Do and meet the SAS criteria?   * if so, **write down the corresponding sides and angle** and write at **least 2 sentences** explaining why they are congruent. * If not, explain why not in **at least 2 sentences**. |
| 1. Given: ,   Do and meet the SAS criteria?   * If so, **write down the corresponding sides and angle** and write **at least 2 sentences** explaining why they are congruent. * If not, explain why not in **at least 2 sentences**. |